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Report to Congressional Requestors

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October 1985

NUCLEAR WASTE

Quarterly Report on DOE's Nuclear Waste Program as of September 30, 1985

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United States
General Accounting Office
Washington, D.C. 20548

Resources, Community, and
Economic Development Division

B-202377

October 30, 1985

The Honorable James A. McClure
Chairman, Committee on Energy and Natural Resources
United States Senate

The Honorable J. Bennett Johnston
Ranking Minority Member
Committee on Energy and Natural Resources
United States Senate

In response to your request, this report provides the status of the Department of Energy's implementation of the Nuclear Waste Policy Act of 1982 for the quarter ending September 30, 1985. It discusses the Department's progress in meeting legislated deadlines, summarizes the status of the Nuclear Waste Fund, and discusses management initiatives and federal relations with states and Indian tribes.

We are sending copies of the report to the Chairmen of the Senate Committee on Governmental Affairs, the House Committee on Government Operations, and the House Committee on Energy and Power; the Secretary of Energy; the Nuclear Regulatory Commission; and other interested parties.

J. Dexter Peach
Director

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Executive Summary

United States nuclear power plants have produced over 22 million pounds of highly radioactive waste that will remain hazardous to people and the environment for thousands of years. The Nuclear Waste Policy Act of 1982 established a program and milestones for developing and constructing deep underground facilities (repositories) to safely isolate this waste.

At the request of the Senate Committee on Energy and Natural Resources, GAO provides quarterly status reports on the Department of Energy's (DOE's) efforts to implement the act. This report provides information for the quarter ending September 30, 1985, on

- legislatively mandated program activities,
- selected management initiatives, and
- program funding.

Background

The act established numerous requirements leading to the selection of sites and construction and operation of repositories for the permanent disposal of highly radioactive materials in deep underground rock formations. The act also required DOE to consider the need for a federal waste facility where the waste can be packaged, monitored, stored, and subsequently retrieved for disposal in a permanent repository.

The act established the DOE Office of Civilian Radioactive Waste Management to manage the program and, among other responsibilities, requires it to (1) prepare various planning documents to aid siting decisions, (2) conduct detailed site characterization studies at selected potential sites, (3) design and construct the nation's first repository, and (4) consult and cooperate with affected states and Indian tribes in implementing the program. To finance the program, the act established the Nuclear Waste Fund to receive fees from the owners and generators of nuclear waste.

Results in Brief

The program has made progress toward meeting the act's requirements, but continues to lag behind legislated and DOE-imposed deadlines for such activities as the issuance of first repository final environmental assessments that are now expected to be completed in December 1985. Events directly related to requirements of the act that occurred during the quarter included the issuance of the second repository program final regional characterization reports, and an overall mission plan for the

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waste program. One new lawsuit was filed concerning the nuclear waste program.

In addition to those developments that were directly related to legislative requirements, other activities occurred during the quarter. For example, several audits were initiated or completed, including an Energy Information Administration analysis of the one-time fees owed by utilities to the Nuclear Waste Fund (see p. 29), and negotiations began with one of the affected Indian tribes for a formal consultation and cooperation agreement.

As of the end of fiscal year 1985, the Nuclear Waste Fund had a balance of about $1.5 billion. During the quarter, DOE paid about $265 million from the Nuclear Waste Fund to the U.S. Treasury to repay the fund's appropriated debt plus interest.

GAO Analysis

Program Activities

DOE continued to receive and analyze comments on the draft environmental assessments that are supposed to determine the suitability of candidate sites for the first waste repository and compare the sites for selection for site characterization studies. By the end of the quarter, DOE had received over 21,000 comments from over 2,600 commentors. DOE officials expect to complete the assessments in late 1985. The act required that these assessments be issued by January 1, 1985. (See p. 14.)

Many comments on the draft environmental assessments were critical of DOE's methodology for ranking potential repository sites for site characterization. As a result DOE revised its methodology and requested the National Academy of Sciences to independently review the revised methodology. DOE Waste Office officials do not know if the revised methodology will change the final rankings of the sites considered for site characterization because the new methodology has not yet been applied. (See p. 15.)

In September 1985 DOE issued its final regional characterization reports for the second repository program. These documents, used in conjunction with the screening methodology document issued in April 1985 will be used to develop an area recommendation report that is expected to

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narrow the number of areas in 17 states under consideration for a second repository. (See p. 18.)

DOE's mission plan, which is to provide a basis for making informed decisions on the waste program, was issued in July, about 1 year behind schedule. (See p. 20.)

Other program documents that were completed during the quarter included DOE's second draft project decision schedule, draft transportation business and institutional plans, and the Environmental Protection Agency's final environmental standards for the management of high-level waste. The Nuclear Regulatory Commission must comply with these standards when issuing construction and operating licenses to DOE. (See p. 19.)

During the quarter DOE also began internal negotiations to determine fees to be paid into the Nuclear Waste Fund for the disposal of high-level defense wastes. (See p. 16.)

One new lawsuit was filed during the quarter. In that suit, Tennessee contended that DOE, by conducting a study of the suitability of three Tennessee locations for a monitored retrievable storage facility without any involvement of the state, was in violation of the act. (See p. 24.)

Management Initiatives

Several audit reviews were initiated or completed including a public accountant examination of the Nuclear Waste Fund's financial statements for fiscal year 1985 and a program evaluation by the DOE Office of the Inspector General. DOE's Energy Information Administration also released a verification report of the one-time fees paid into the fund by utilities. The report's analyses showed that the one-time fees of 15 of 83 reactors or facilities could not be verified or only partially verified on the basis of available report data. DOE's Waste Office is working to resolve these inconsistencies. (See p. 28.)

During Senate and House hearings, state and tribal leaders indicated that their confidence in DOE's implementation of the program remains low even though DOE continues to make efforts to meet with, inform, and involve them in the waste program. Negotiations began with the Confederated Tribes of the Umatilla Indian Reservation for a formal consultation and cooperation agreement. (See p. 31.)

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Funding

The Nuclear Waste Fund balance as of September 30, 1985, was about $1.5 billion. During fiscal year 1985 the fund received about $1.8 billion in fees from the owners and generators of nuclear waste and spent about $314.3 million. DOE paid the appropriated debt of about $265 million owed to the Department of the Treasury in September 1985.
(See p. 39.)

Recommendations

GAO is making no recommendations.

Agency Comments

The views of directly responsible officials were sought during the course of GAO's work and are incorporated in the report where appropriate. At the Committee's request, GAO did not request DOE to review and comment officially on a draft of this report.

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Abbreviations

DOE	Department of Energy
EIA	Energy Information Administration
EPA	Environmental Protection Agency
FERC	Federal Energy Regulatory Commission
GAO	General Accounting Office
MRS	monitored retrievable storage
NAS	National Academy of Sciences
NRC	Nuclear Regulatory Commission
NWPA	Nuclear Waste Policy Act of 1982
OCRWM	Office of Civilian Radioactive Waste Management
OIG	Office of the Inspector General
OGR	Office of Geologic Repositories
OSTS	Office of Storage and Transportation Systems
RCED	Resources, Community, and Economic Development Division
R&D	research and development

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Chapter 1

Introduction

Enacted on January 7, 1983, the Nuclear Waste Policy Act of 1982 (NWPA) (Public Law 97-425) established a comprehensive national program to construct geologic repositories for the long-term disposal of high-level radioactive nuclear waste. The Department of Energy (DOE) intends to begin accepting title to the nuclear waste for disposal in January 1998 under provisions of contracts entered into with nuclear utilities. The act also established within DOE the Office of Civilian Radioactive Waste Management (OCRWM) to carry out the provisions of NWPA and established the Nuclear Waste Fund to finance the program.

The act requires us to report to the Congress on the results of an annual audit of OCRWM. Our first annual audit report, issued on January 10, 1985, focused on the problems DOE had in initiating the program and establishing its financial basis. Our second annual audit issued on September 30, 1985, focused on problems OCRWM has had in meeting the act's requirements.

On March 26, 1984, the Senate Committee on Energy and Natural Resources requested that we report, on a quarterly basis, the status of OCRWM activities to implement the act. Our previous quarterly reports discussed actions that took place during the period of July 1, 1984, through June 30, 1985. They discussed the status of OCRWM program activities directed toward meeting the act's legislatively mandated milestones, especially those that were past due or immediately upcoming, the status of selected internal management actions, and the status of the Nuclear Waste Fund.[1] This report covers the status of program and fund activities during the quarter ending September 30, 1985, and summarizes fiscal year 1985 fund activities.

This chapter provides an overview of OCRWM's activities and discusses the report's objectives, scope, and methodology. Chapter 2 discusses OCRWM's activities and focuses on those directed toward meeting legislatively mandated milestones that are current, past due, or upcoming in the next several months. Chapter 3 discusses the status of selected internal management actions and includes a discussion of OCRWM's relations with states and Indian tribes. Chapter 4 describes the status of the Nuclear Waste Fund as of September 30, 1985, and includes a description of Nuclear Waste Fund investment activity conducted by DOE.

[1]See appendix I for a list of our quarterly and annual reports concerning DOE's nuclear waste program.

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Overview

The safe disposal of spent nuclear fuel[2] and other highly radioactive nuclear waste[3] in the United States has been a matter of national concern since the first civilian nuclear reactor began generating electricity in 1957. These materials, which remain potentially hazardous for tens of thousands of years, must be isolated from the environment until their radioactivity decays to levels that will pose no significant threat to people or the environment. Electric utilities have accumulated over 10,000 metric tons (over 22 million pounds) of highly radioactive spent nuclear fuel. Most of it is in the form of spent fuel rods that are stored in pools of water at the reactor sites. DOE estimates that by the year 2000, approximately 50,000 metric tons of radioactive spent fuel will have accumulated.

NWPA requires DOE to develop deep geologic repositories to accommodate the long-term safe disposal of nuclear waste and to conduct related research, development, and demonstration projects. Costs are to be paid from the Nuclear Waste Fund, which receives fees from owners of operating nuclear power plants and owners of high-level nuclear waste generated in the past. The full cost of the program was estimated by DOE in January 1985 to be between $20.6 billion and $35.1 billion (in 1984 dollars), depending upon the geologic media[4] selected for the two repositories and possible delays in the repository program. This estimate includes the cost of developing, constructing, operating, and closing two geologic repositories.

The act authorized DOE to enter into contracts with all generators and owners of highly radioactive materials. As of September 30, 1985, DOE had contracts with 65 commercial owners, covering 149 reactors. (During the quarter ending September 30, 1985, one contract covering two reactors was signed.) The contracts establish (1) the terms and conditions under which DOE will dispose of spent fuel generated by civilian power reactors and (2) the procedures to follow in collecting fees to provide for full recovery of the government's disposal costs.

[2]Spent nuclear fuel is the used uranium fuel that has been removed from a nuclear reactor. Spent fuel and other types of highly radioactive wastes are difficult to dispose of because of their high toxicity and long radioactive life, and because they produce heat.

[3]The act also requires DOE to use one or more of the repositories developed under the act to dispose of high-level radioactive waste resulting from the production of nuclear weapons material.

[4]Geologic media are the underground rock formations in which the radioactive waste will be placed. The formations now being considered as host rocks for the repositories are basalt lava, a molten material from volcanoes or fissures; tuff, a hard, compacted ash from volcanoes; rock salt, a sedimentary rock formed by the evaporation of water from a saline solution; and crystalline rock, a general term used for igneous and metamorphic rocks, which include granite.

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The contracts require the payment of a 1-mill-per-kilowatt-hour fee for electricity generated by nuclear power beginning on April 7, 1983. The 1-mill fee covers the generation of spent fuel during the ongoing production of electricity from nuclear plants and is to be paid every 3 months. During the quarter, DOE collected $92.3 million in these quarterly fees.

The contracts also require the payment of a one-time fee for spent fuel generated before April 7, 1983. The owners had to select one of three options for paying the one-time fee and inform DOE by June 30, 1985, which method each would use. These options included full payment before June 30, 1985, with no interest charges; full payment with interest charges before delivery of the spent fuel to DOE; or quarterly payments plus interest spread over 10 years. By June 30, 1985, DOE had collected $1.4 billion of the estimated $2.3 billion in one-time fees. During the quarter, DOE collected another $1.5 million in one-time fee payments. Chapter 4 contains details about the one-time fee payments.

OCRWM, the office established by NWPA to administer the DOE waste program, is located at DOE headquarters in Washington, D.C., and is supported by DOE's field operations offices. OCRWM project offices in Columbus, Ohio; Las Vegas, Nevada; and Richland, Washington, are responsible for conducting repository development activities in the three main geological media under consideration for selection as the first repository site. The Richland office is primarily working with basalt, while the Columbus and Las Vegas offices are examining salt and tuff sites, respectively. The Chicago project office manages the crystalline rock program for the second repository. A separate project office in Richland manages the monitored retrievable storage (MRS) program. In addition, DOE has established an office in Oak Ridge, Tennessee, to assist in the development of the MRS program. These offices in turn rely largely on contractors and national laboratories to conduct specific activities.

In February 1983 DOE formally identified nine areas in six states[5] as potential sites for the first repository. After an analysis of available data and completion of a number of requirements, NWPA called for the Secretary of Energy to formally nominate five sites as suitable for further study and to recommend three sites to the President by January 1985 for further geologic testing called site characterization studies. These studies are to include the construction of exploratory shafts for

[5]The states containing potential sites for the first repository are Louisiana, Mississippi, Nevada, Texas, Utah, and Washington.

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tests at repository depth—1,200 to 3,000 feet. One of the characterized sites will most likely be the location of the first repository.

As discussed in more detail in chapter 2, OCRWM has not yet completed all the necessary requirements prior to recommending three sites to the President. Although final siting guidelines, due by July 7, 1983, establishing performance objectives for a geologic repository, were issued in December 1984, environmental assessments that will identify the three sites to be recommended for site characterization studies have not been finalized. Draft environmental assessments, which evaluate each site using the formal siting guidelines and provide the basis for determining whether a site is suitable for site characterization activities, were issued on December 20, 1984. All interested parties could submit written comments to DOE on the draft assessments during the 90-day comment period that ended March 20, 1985. OCRWM officials stated at the end of the quarter that they intend to issue the final assessments in December 1985.

After completion of the site characterization studies, the President is required by NWPA to recommend one site for repository construction to the Congress. NWPA requires the President to make a recommendation by March 31, 1987; however, DOE currently does not expect to complete site characterization studies until 1990 and does not expect the President to make the recommendation until 1991.

The act also requires the Secretary of Energy to recommend to the President, by July 1, 1989, at least three potential sites for a second repository. The President is then required to make a final site recommendation for the second repository to the Congress by March 31, 1990; however, DOE does not expect to make its recommendation to the President for the second repository until after he recommends the site for the first repository to the Congress. DOE currently expects that the President will not make his recommendation for the second repository until 1998. As described in chapter 2, OCRWM is conducting a site-screening process for the second repository.

NWPA also requires that DOE submit to the Congress by June 1985 a determination of whether the waste program should include an MRS facility and a proposal for the construction of this facility. DOE has concluded that an MRS facility should be an integral part of the waste management system; however, as described in chapter 2, DOE does not expect to submit the final determination and proposal to the Congress until January 1986.

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Objectives, Scope, and Methodology

On March 26, 1984, the Senate Committee on Energy and Natural Resources requested that we issue quarterly reports on the status of OCRWM's activities to implement NWPA. This quarterly report discusses OCRWM activities during the quarter ending September 30, 1985. It (1) highlights OCRWM's activities directed toward meeting NWPA's legislatively mandated milestones, especially those that are already past due or are forthcoming in the next several months, and discusses related litigation, (2) describes selected OCRWM management activities, including a discussion of federal/state relations, and (3) provides the status of the Nuclear Waste Fund, including recently initiated investment activity.

To obtain information on the status of OCRWM program activities and selected management initiatives, we reviewed DOE and OCRWM program documents, publications, correspondence, and studies and interviewed OCRWM managers and operating personnel responsible for planning and managing activities associated with the research and development of the waste repositories.

We reviewed program documents completed during the quarter including the final mission plan, a draft transportation business plan for the inclusion of the private business sector in packaging and transporting high-level wastes, a draft transportation institutional plan to identify and resolve institutional issues concerning the transportation system, the regional characterization reports for the second repository, the draft project decision schedule, and DOE's Energy Information Administration's report verifying utilities' one-time fees. We also reviewed selected comments from states and others on the draft environmental assessments and internal documents describing OCRWM's plan for preparing the final assessments. In addition, we reviewed documents relating to DOE's proposed MRS facility. We also attended a National Association of Regulatory "Utility Commissioners" meeting in San Francisco, California, and a National Governors Association meeting in Charleston, South Carolina, where OCRWM officials discussed various aspects of the program with state and utility officials.

To obtain information on Nuclear Waste Fund receipts and disbursements and the fund's investment activity, we contacted officials responsible for DOE's financial activities. We also obtained financial and contract data directly from the DOE financial information system and from the Energy Information Administration (EIA). We did not verify data obtained from DOE's financial information system—a task that could not be accomplished within the time frame of this report.

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The views of directly responsible officials were sought during the course of our work and are incorporated in the report where appropriate. At the Committee's request, we did not request DOE to review and comment officially on a draft of this report.

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Status of OCRWM Activities Directed Toward Legislated Requirements During the July-September 1985 Quarter

This chapter discusses activities during the quarter ending September 30, 1985, directed toward meeting the requirements of NWPA. It focuses on those requirements with deadlines that are currently due, have already passed, or are upcoming. In particular, the chapter discusses

- OCRWM's efforts to complete environmental assessments, which must be done before DOE can recommend three sites to the President for site characterization studies;
- efforts underway to determine the fees to be paid for the disposal of high-level defense wastes;
- progress on the proposal for a monitored retrievable storage program; and
- completion of regional characterization reports for the second repository.

The following sections discuss the status of these four areas and highlight other OCRWM activities including completed draft and final documents directed toward legislative requirements of the act. Also included is a status report on litigation resulting from OCRWM activities.

Final Environmental Assessments Now Targeted for December 20, 1985

NWPA requires the Secretary of Energy to nominate at least five first repository sites that he determines suitable for site characterization and to then recommend three sites for characterization to the President. Each nominated site is to be accompanied by an environmental assessment. These assessments must include the probable impacts of site characterization studies, such as drilling the exploratory shafts necessary to collect geologic data, and ways to avoid such impacts.

The act required that the final assessments be completed no later than January 1, 1985, when the Secretary was to have recommended to the President three sites for characterization studies. Nine draft assessments—one for each potential first repository site located in six states—were originally scheduled for issuance by OCRWM in August 1984 but were not issued until December 20, 1984. The assessments compared each site with the others and ranked them according to criteria defined in the siting guidelines that were also issued in December 1984. The five sites proposed in the draft assessments for nomination are located in Mississippi, Nevada, Texas, Utah, and Washington. The three sites proposed in the draft assessments for site characterization studies are located in Nevada, Texas, and Washington.

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During a 90-day comment period that ended March 20, 1985, all interested parties could submit written comments to DOE on the draft assessments. DOE received over 21,000 comments on the draft assessments from more than 2,600 commentors, including all of the six states containing potential first repository sites, Indian tribes, other federal agencies, and interested parties. Although the comment cut-off date was March 20, 1985, OCRWM received what it determined to be significant comments through the end of June 1985, and plans to consider and respond to each comment. The disposition of each comment received is to be addressed in a separate comment response document for each potential site.

DOE now plans to issue on December 20, 1985, final environmental assessments for each of five nominated sites. DOE had planned to issue the final assessments in August 1985, but the number and complexity of the comments received have delayed their release. According to OCRWM repository officials, environmental assessments for the other four sites will be completed at a later date to allow them to be considered in the second repository site selection process.

OCRWM officials have stated that they were impressed with the quality of the comments, which, among other things, critiqued the assessments' technical and factual accuracy, the lack of coverage of some areas such as the transportation of wastes, and the ranking methodology used in the assessments. According to OCRWM officials, the comments have led to changes in the assessments.

Of particular note, the National Academy of Sciences' (NAS') Board of Radioactive Waste Management commented in April 1985 that the analysis in chapter 7 of the draft assessments—the chapter that evaluates each site against each criterion established in the siting guidelines and ranks all sites using three different decision-making methodologies—was unsatisfactory, inadequate, and not state-of-the-art.[1] For example, NAS stated that two of the three methodologies were not satisfactory because the rankings were subjectively determined. In response to that criticism and similar comments from states and other parties, OCRWM Siting Division officials stated that OCRWM has decided to revise its ranking methodology and selected the methodology that NAS said was a more valid means of comparing sites.

[1]On September 12, 1985, we issued a briefing document to the Chairman, House Committee on Interior and Insular Affairs, concerning the aggregation methods used in the draft assessments. See appendix I for a brief description of this document.

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On August 29, 1985, at the request of the Governor of Washington and in response to other comments calling for an outside independent review of the siting methodology to be used in the assessments, the Director of OCRWM formally requested the NAS Board on Radioactive Waste Management to independently review the revised methodology in order to "assure an effective and credible document". The NAS Board quickly agreed and copies of the revised methodology were sent to the Board in September. OCRWM requested that the Board transmit its comments on the methodology by November 15, 1985. In hearings before the Subcommittee on Energy Research and Development, Senate Committee on Energy and Natural Resources, in September 1985, the Director of OCRWM stated that he would abide by the recommendations of the NAS Board.

As of the end of the quarter, OCRWM officials did not know whether the new methodology would affect the final rankings of the sites because the OCRWM Siting Division had not yet applied the revised methodology to the data in the draft assessments. After NAS completes its review, OCRWM intends to apply the revised methodology to the siting evaluations in order to rank the sites. OCRWM also said that the project offices are reviewing the evaluations of each site for each siting criterion to gain consensus on the values assigned to each site for each criterion. OCRWM officials remained optimistic that they could complete the final assessment reviews and release the final assessments on December 20, 1985.

DOE Is Negotiating an Agreement for Defense Waste Costs

On April 30, 1985, the President advised the Secretary of Energy that, under NWPA, he should dispose of defense high-level nuclear waste and commercial wastes in a single repository because of the cost savings. As of the end of the quarter, officials in DOE's Office of Defense Programs and OCRWM said that they were negotiating a fee recommendation agreement on defense wastes that would establish the Defense Office's obligation for funding its share of the nuclear waste disposal program's total costs. According to these officials, the agreement will establish a fee comparable to the fee paid by the commercial sector and will be paid by DOE beginning in fiscal year 1987. The agreement will also establish procedures for determining DOE's one-time fee for defense wastes generated prior to fiscal year 1987. DOE intends its financial obligation to be comparable to the obligation of commercial generators of high-level waste. The agreement will not determine how much defense waste is to be deposited into the repositories—but only the methodology for the fees. The amount to be deposited is under separate review within DOE.

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DOE officials indicated that a draft fee recommendation agreement will be submitted to the Secretary of Energy for concurrence during the next quarter. After the Secretary concurs, OCRWM officials said that they intend to publish the draft agreement in the Federal Register for comment. They expect to receive comments from the public including the fee-paying utilities comparing defense waste fees to the fees paid for commercial waste. The officials also said that the utilities' comments will be incorporated into the final cost allocation agreement where appropriate. DOE intends to begin paying fees into the Nuclear Waste Fund by fiscal year 1987.[2]

MRS Proposal to be Submitted in January 1986

NWPA required DOE to complete a detailed study of the need for and feasibility of one or more MRS facilities on or before June 1, 1985. DOE was also required to submit, by that date, a proposal for the construction of one or more of these facilities to the Congress for its approval. These facilities are generally thought of as ground-level or slightly below ground-level storage facilities. NWPA specified that the proposal include a program for siting, developing, constructing, and operating an MRS facility; site-specific designs and cost estimates for constructing the first facility; a plan for funding the construction and operation of such facilities; and a plan for integrating such facilities into the federal waste management system.

OCRWM has determined that an MRS facility should be part of an integrated waste management system and would enhance the system's operation by repackaging and consolidating spent fuel shipped to it from nuclear power plants. DOE did not complete the study or submit the proposal by June 1, 1985; however, on that date DOE issued a status report to the Congress on the MRS program stating that DOE would submit the MRS proposal to the Congress by January 15, 1986. DOE estimates that, after congressional approval, it will take approximately 10 years to have an operational MRS facility.

During the quarter, DOE made progress toward submitting its MRS proposal to the Congress by January 15, 1986. According to the OCRWM MRS team leader, the Richland project office has submitted a draft program plan and a draft needs and feasibility analysis that are currently under

[2]In our first annual report (GAO/RCED-85-27), we recommended that DOE decide on the appropriate fee to charge the federal government for the disposal of high-level waste. On March 26, 1985, DOE concurred with our recommendation.

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review by OCRWM officials. OCRWM, in response to comments from Tennessee on a preliminary analysis of the need for and feasibility of an MRS facility released in April 1985, plans to incorporate a needs and feasibility analysis in the environmental assessment that will accompany the MRS proposal to the Congress. In addition, revised cost estimates and the site designs for the MRS have been completed and are being reviewed by the Richland project office and OCRWM. DOE expects to complete the proposal during the next quarter for submission to the Congress by January 15, 1986.

To better integrate the MRS and repository designs, an MRS/Repository Interface Task Force, made up of representatives from the (1) Office of Storage and Transportation Systems (OSTS), (2) Office of Geologic Repositories (OGR), (3) the repository project offices, and (4) architect-engineers for the MRS and repository project offices have beer working to resolve systems cost uncertainties and differences between the MRS and repository programs. According to the MRS team leader, the task force work has resulted in a generally compatible approach to surface facility designs for the repository and MRS facility.

Second Repository Program Issues Final Regional Characterization Reports

On September 11, 1985, OCRWM issued final regional characterization reports for the second repository program. These six reports (two for each of the three regions included in the program) describe the environmental and geological data to be used in identifying possible candidate areas for the nation's second high-level nuclear waste repository. The information in the reports was collected from published literature such as U.S. Geological Survey reports, state geologic data, and technical journals. The reports identify 236 bodies of crystalline rock in 17 states that extend to a depth of at least 1,000 feet and cover a minimum of 39 square miles. This information provides the data base which, in conjunction with DOE's screening methodology document (issued in April 1985), will be used to develop an area recommendation report that is expected to narrow the number of rock bodies under consideration to 15 to 20 in 4 to 6 states. A draft of this report is scheduled to be issued November 15, 1985, for public review and comment.

As a supplement to the regional characterization reports, DOE also prepared three comment response documents (one for each region) responding to state and other comments on the December 1984 revised draft regional characterization reports. In the comment response documents, DOE responded to the 1,600 comments, and indexed and cross-referenced each comment and response so that commentors could determine how

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DOE responded to their particular concerns. The response documents show that DOE added new data, deleted incorrect information, and, in some cases, felt that some comments were already addressed or disagreed with comments and therefore made no changes.

DOE officials stated that when the draft area recommendation report is released in November 1985, DOE will brief states and tribes and allow 90 days for responses. Some states have expressed the concern that the 90-day comment period is not sufficient.

During the quarter ending September 30, 1985, representatives from DOE and the 17 second repository states met in Boston, Massachusetts, to discuss the second repository program. According to DOE officials, states' questions focused primarily on the draft area recommendation report and the area characterization plans, which are due in November 1985 and May 1986, respectively.

As of the end of the quarter, OCRWM officials stated that they are striving to meet the following milestones for the second repository program.

Table 2.1: Second Repository Program Milestones

Draft area recommendation report	November 1985
Draft area characterization plans	March 1986
Final area recommendation report	May 1986
Final area characterization plan	Summer 1986
Nominate five sites	1991
Recommend three sites for detailed site characterization	Concurrently with, or shortly after, nominating five sites
President recommends second repository site to the Congress	1998
Begin accepting high-level waste	2006

Documents Required by NWPA Issued

During the quarter, EPA issued its final environmental standards for high-level waste and OCRWM issued its final mission plan. In addition, OCRWM issued drafts of a project decision schedule, transportation business plan, and transportation institutional plan.

EPA Issued Final Environmental Standards for High-Level Waste

Section 121 of NWPA required the EPA, by January 1984, to promulgate generally acceptable standards for protection of the general environment from offsite releases from radioactive material in repositories. On August 15, 1985, the EPA issued its Environmental Standards for the

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Management and Disposal of Spent Nuclear Fuel and High-Level and Transuranic Radioactive Wastes (40 C.F.R. part 191). These standards apply to the management and disposal of high-level and transuranic wastes[3] and spent nuclear fuel generated by commercial reactors and similar materials generated by atomic energy defense activities under the jurisdiction of DOE.

The Nuclear Regulatory Commission (NRC) and DOE are responsible for complying with and implementing these standards. NRC has issued procedural and technical requirements for the disposal of high-level waste in repositories. It will obtain compliance by issuing licenses to DOE at various steps in the construction and operation of the repositories. DOE's siting guidelines (see ch. 1) must also comply with the EPA standards. OCRWM officials told us that they have been kept informed on changes to the draft EPA standards issued in December 1982 and that the final EPA standards do not contain any significant changes that would require modification to the siting guidelines.

EPA's standards are divided into two parts. The first part concerns the management and storage of waste prior to final disposal in a geologic repository. It limits the amount of radiation exposure to the public from any facility regulated by NRC, which includes all commercial reactors. It also limits exposures to the public from waste emplacement and storage operations of DOE disposal facilities that are not regulated by NRC.

The second part of the standards establishes four sets of requirements for the disposal of these materials. The initial requirements for disposal limit the projected releases of radioactivity to the environment for 10,000 years after disposal. The second set of requirements contain provisions that are intended by EPA to provide adequate assurance that the initial containment requirements will be met. The third set of requirements limits the amount of exposure to the public for 1,000 years. Finally, a set of groundwater protection requirements limits radiation concentration in groundwater for 1,000 years.

Mission Plan Issued

Section 301 of NWPA required that DOE prepare a mission plan—a comprehensive report providing sufficient information to permit informed

[3]Transuranic wastes contain man-made elements that are heavier than uranium. They are predominately characterized by medium-level radiation and slow decay, and remain hazardous for long periods of time. Most of these wastes result from reprocessing nuclear fuel.

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decisions on the nuclear waste program and related research. DOE submitted the plan to the Congress in July 1985, over a year past the date required by the act. The Secretary is to use this plan as a basis for making decisions 30 days after it has been submitted to the appropriate congressional committees.

On September 12 and 13, 1985, the Subcommittee on Energy Research and Development of the Senate Committee on Energy and Natural Resources, and the Subcommittee on Energy and Environment of the House Committee on Interior and Insular Affairs, respectively, held hearings on the mission plan. Officials from DOE, NRC, the six first repository states, second repository states, Indian tribes, and the public testified.

NRC testified that DOE has considered all major NRC milestones in the national high-level waste program in the plan and has resolved all but one concern NRC had on the previous two mission plan drafts. The one exception is the timing of the Secretary of Energy's preliminary determination of three sites as suitable for repository development as required by NWPA. The mission plan states that at the time the Secretary of Energy recommends three sites to the President for site characterization, the Secretary will also make a preliminary determination of the suitability of the three sites for repository development. The NRC commissioners have not made a joint decision as to whether the preliminary determination should be made before or after the completion of site characterization work.

States' and tribes' testimonies reflected a number of concerns about the mission plan. Many states and tribes disagreed with DOE's position on preliminary determination and were also concerned with DOE's continued slippage of early milestones of the NWPA schedule without compensatory adjustments for the 1998 date set for DOE to begin accepting waste. Other comments referred to such areas as the plan's lack of essential technical and scientific information, and its insufficient insight into impediments to program implementation.

The Director, OCRWM, testified that the plan is a document that has been under development for an extended period. It is intended to give today's best estimate of plans and intentions. In many cases, the plan states that details are not laid out but will be developed. He also emphasized that the plan is not a contract but is a living document subject to review and change.

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OCRWM Issued a Draft Project Decision Schedule

NWPA requires the Secretary of Energy to prepare, in cooperation with affected federal agencies, a project decision schedule that portrays the optimum way to attain the operation of a repository by January 1998. The schedule is to include a description of objectives and a sequence of deadlines for all federal agencies involved and is to identify activities that, if delayed, would cause a delay in beginning repository operation. Any federal agency that determines it cannot comply with project decision schedule deadlines must explain the reasons in writing to the Secretary of Energy, who must report the matter and DOE's response to the Congress within 30 days.

In July 1985 OCRWM issued its second draft project decision schedule, which is based on its final mission plan, also issued in July. (OCRWM had issued its first draft project decision schedule in January 1985, which was based on its draft mission plan.) The final schedule is to be completed by November 1985. The draft schedule included NWPA-mandated deadlines for the first repository, the MRS program, second repository program, and transportation program. As further activity is authorized by the Congress in these areas, DOE plans to modify the schedule.

Draft Transportation Business and Institutional Plans Issued

NWPA authorized DOE to establish a national system for the disposal of high-level nuclear waste. A primary element of the waste management system will be the development of a waste transportation system. NWPA also directs DOE to contract with private industry to the fullest extent possible in each aspect of the transportation system.

In August 1985 OCRWM released for public comment a draft transportation business plan. The draft plan described DOE's expected contracting strategies, and actions to acquire equipment and contractors for developing and operating the required transportation system. OCRWM requested that all comments be submitted by September 30, 1985, and is planning to issue a final business plan later in 1985.

The acquisition strategy described in the draft plan is divided into two phases. Phase I covers the development and acquisition of prototype casks that will be used to ship radioactive waste to or between federal waste facilities. The cost for phase I is estimated to be about $80 million. Phase II of the strategy will be implemented when DOE begins accepting waste at the first repository or the MRS facility. At that time DOE will implement transportation operations. The cost to provide the first 5 years of system operation is estimated to exceed $100 million.

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DOE issued its draft transportation institutional plan for public comment in September 1985. The purpose of the plan, a companion document to the business plan, is to lay the foundation for interaction among all interested parties to define a comprehensive process for identifying, addressing, and resolving issues related to the waste transportation system. The plan describes the institutional development and operation of the transportation system and lists four elements necessary for achieving its stated purposes:

- providing policy guidance for establishing the transportation system;
- identifying the major participants, who must interact to build the transportation system and agree on the philosophy of the system;
- providing mechanisms for interaction to ensure wide participation in program planning and implementation; and
- providing a framework for managing and resolving issues related to the development and operation of the system.

As the program evolves, DOE plans to combine these documents into a single coordinated plan for all activities related to the development and operation of the transportation system. In addition, OCRWM intends to issue a transportation issues discussion document next year, which will describe identified issues and discuss DOE's plans and options for addressing those issues.

Status of Litigation Regarding OCRWM Activities

As discussed in our prior reports, a total of 12 lawsuits directed at OCRWM repository activities had previously been filed. As the result of various actions during this quarter, DOE expects court actions that may soon resolve several of these cases.[4] Also during the quarter one new lawsuit was filed by the state of Tennessee protesting OCRWM's pursuit of a potential MRS site in Tennessee. The following sections describe the ongoing court cases directed at OCRWM waste management activities.[5]

[4]See our fourth quarterly report (GAO/RCED-85-156) for descriptions of these cases.

[5]Two other lawsuits had been filed earlier challenging the amount of fees to be paid into the Nuclear Waste Fund. One of these cases has been resolved in DOE's favor and the other is still under review by the U.S. Court of Appeals for the District of Columbia.

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Environmental Policy Institute, et al. v. Herrington, and Other Siting Cases

In December 1984 and March 1985, a number of environmental groups and the state of Washington, respectively, petitioned the U.S. Court of Appeals for the Ninth Circuit to review the siting guidelines issued by DOE in December 1984 to determine whether they are in accordance with NWPA. In May 1985 DOE filed a motion to dismiss both cases—Environmental Policy Institute, et al. v. Herrington and Washington v. DOE—arguing that the claims of the petitioners are premature because the issuance of the guidelines is a preliminary step to the issuance of the environmental assessments. During the quarter ending September 30, 1985, the seven siting cases filed during the quarter ending June 30, 1985, were transferred to the Ninth Circuit where the Environmental Policy Institute and Washington cases had previously been filed.

On August 16, 1985, the court ordered that action on the seven new guidelines cases be deferred until the motion to dismiss the Environmental Policy Institute and Washington cases is resolved. The case has been fully argued and DOE expects a decision soon.

Nevada v. Herrington

In December 1984 Nevada filed suit against DOE over the disapproval of a part of its fiscal year 1985 grant request. (See chapter 3 for a description of OCRWM's grant program.) DOE had disapproved $1.5 million of Nevada's 1985 grant request because it felt that the funds were to be used for independent data-gathering activities that were not appropriate at this stage of the site-selection process. During the past quarter oral arguments were presented, and DOE expects a court decision soon on the merits of the case.

Tennessee v. Herrington

During the quarter a new lawsuit was filed by the state of Tennessee. On August 20, 1985, the state of Tennessee filed suit in the U.S. District Court located in Nashville, Tennessee, alleging that any DOE proposal to request authority from the Congress to construct an MRS in Tennessee would be in violation of the NWPA. Tennessee contends in its lawsuit that, contrary to the act, DOE had not consulted with the state in conducting a study regarding the suitability of three Tennessee locations for an MRS. In its lawsuit, Tennessee requested that the Secretary of Energy be enjoined from presenting any proposal to the Congress for an MRS in Tennessee until the requirements of the act have been fulfilled. According to DOE, as of the end of the quarter, no further court proceedings had occurred on this case.

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Status of Selected OCRWM Management Activities

NWPA established OCRWM to carry out DOE's responsibilities under the act. In October 1983 the Secretary of Energy formally approved and activated OCRWM, and in May 1984 a director was appointed by the President and confirmed by the Senate.[1] Our previous quarterly reports discussed several initiatives that OCRWM has taken to improve its management of activities directed toward accomplishing the objectives of the act. These included (1) making organizational and staffing changes, (2) developing an internal program management system with an automated information system, (3) contracting with a certified public accountant to audit the Nuclear Waste Fund, and (4) developing a program of coordination with affected states and Indian tribes.

During the quarter ending September 30, 1985, OCRWM made additional organizational changes, continued to increase its staffing levels, completed a second draft manual for OCRWM's program management system, and initiated an independent audit of fiscal year 1985 financial activities. Several other audits were also started or completed. OCRWM also continued to take steps to improve its program to provide information to states and tribes, although many state and tribal leaders remain critical of the program.

OCRWM Organizational and Staffing Changes

As reported in our previous quarterly reports, OCRWM has made progress in organizing to meet NWPA objectives and in filling staff positions both at headquarters and in the field offices. OCRWM reorganized in July 1984 to provide what the director said would be a more efficient structure for implementing the nuclear waste program.[2] OCRWM made further organizational changes in September 1985 to consolidate and clarify functions. Primary changes were to transfer the functions of program decision scheduling, annual report preparation, and program milestone review from its Office of Policy, Integration, and Outreach to its Office of Resource Management, and to place repository licensing and regulatory functions at a division level in its Office of Geologic Repository. They also made the following changes in OCRWM organization nomenclature. (See app. II for the current organization chart.)

- The Office of Policy, Integration, and Outreach became the Office of Policy and Outreach.

[1]For a detailed discussion of DOE's efforts to establish a separate organization to manage the waste disposal program, see our first annual audit report (GAO/RCED-85-27).

[2]OCRWM also made several organizational changes in November 1984. For a detailed discussion of these changes, see our second quarterly report (GAO/RCED-85-65).

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- The Engineering and Licensing Division within the Office of Geologic Repositories became the Licensing and Regulatory Division, and the Geosciences and Technology Division became the Engineering and Geotechnology Division.
- The Finance and Cost Analysis Division within the Office of Resource Management became the Financial Management and Analytical Services Division.

OCRWM increased the number of persons in the program by a total of 16 during the quarter. At the end of September, no vacancies remained in headquarters and 10 remained in the field. Personnel ceilings for OCRWM headquarters and field offices have not changed since March 1985. OCRWM Office of Resource Management officials said that the ceilings will be raised by 13 positions at headquarters and 39 in the field offices in fiscal year 1986. During the quarter the number of full-time personnel increased from 226 to 242. See appendix III for a table showing OCRWM staffing levels.

OCRWM Draft Program Management System Manual Completed

OCRWM's Office of Resource Management continued to make progress in developing an overall internal program management system to enable OCRWM managers to better plan, monitor, and analyze waste management program elements. However, the system, which is to include (1) all planning documents required by NWPA, (2) an annual operating plan, and (3) a system engineering management plan, has not yet been finalized.

In May 1985 OCRWM issued a draft Program Management System Manual for internal OCRWM review. In June 1985 an OCRWM Resources Management Office official told us that the manual would be revised and finalized by September 30, 1985. In August 1985 OCRWM issued a second draft manual, which is now expected to be reviewed by the Director for concurrence and issued in early fiscal year 1986.

The draft manual describes the program management system, which is to provide centralized managerial direction from OCRWM headquarters. The primary purpose of the system is to provide the OCRWM Director and headquarters staff with a set of policies and procedures that can be used to integrate the various program elements into a cohesive, cost-effective program. It will incorporate existing DOE orders, which have been and will continue to be used for the management of contractor activities by project offices. OCRWM expects the manual to be supported

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by detailed descriptions in management documents that individually address each procedure, plan, or system.

The August draft manual discusses program planning, program controls, financial and administrative management, quality assurance, safety, and OCRWM institutional policy. It also describes the OCRWM information system, which is intended to produce or coordinate production of all periodic reports to management, including technical, cost, and schedule information.

A Resources Management official told us in June 1985 that OCRWM's management information system would be completed and fully operational by September 30, 1985; however, at the end of the quarter, we were told that it will not be fully automated for at least a year. Project offices are currently submitting actual cost data to headquarters by mail, not through computer terminals as planned. This data is being used to issue monthly reports on program cost and schedule performance to test the management information system. The reports provide information on cost and schedule variances for each major project, program milestones, actual and projected status of the fund, and financial status by first and second repository, MRS, and transportation projects.

Several Audits or Reviews Have Been Initiated or Completed

During the quarter, several audits or reviews of OCRWM activities were initiated or completed. Of particular note, (1) OCRWM elected to extend a contract to have a certified public accounting firm examine the Nuclear Waste Fund's financial statements for fiscal year 1985, (2) OCRWM reached agreement with the Federal Energy Regulatory Commission (FERC) to have it verify the basis for fees paid by utilities, (3) EIA released its verification of one-time fees paid into the fund by utilities, and (4) DOE's Office of the Inspector General (OIG) contracted with a certified public accounting firm to evaluate selected program activities. In addition, see appendix I for details on two briefing documents we completed during the quarter concerning the utilities' management of fees collected from ratepayers and the ranking methodology used by OCRWM in the environmental assessments.

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Certified Public Accountant to Examine Fund's Fiscal Year 1985 Financial Statements

In September 1984 DOE signed a $1.3 million contract with a certified public accounting firm—Main Hurdman—to provide auditing services for the fund for fiscal years 1983 and 1984 with options for 3 more years. Main Hurdman submitted the results of its examination of the fund's financial statements, internal controls, and overall fund status in March 1985, and submitted its recommendations in June 1985.[3]

In August 1985 OCRWM modified the contract and exercised the first option of the contract to have Main Hurdman examine the financial statements of the fund for the fiscal year ending September 30, 1985. The option's estimated cost-plus-fixed fee is $270,791. Under the contract, Main Hurdman is to determine whether the fund's financial statements present fairly the financial position and results of operations in accordance with generally accepted accounting principles and whether the fund has complied with laws and regulations that may have a material effect on the financial statements.

Main Hurdman is to notify the Director, OCRWM, by December 1, 1985, of any proposed adjustments to the fiscal year 1985 financial statements, and deliver the statements by December 15, 1985. Management and compliance reports, including recommendations and fund status, are to be submitted by January 15, 1986.

OCRWM to Verify Fees Paid by Utilities

During the quarter, OCRWM began negotiating an agreement with FERC to assist OCRWM, beginning in fiscal year 1986, in verifying fees paid by utilities into the Nuclear Waste Fund. The agreement calls for FERC, during their regularly scheduled 3-year audits of nuclear utility companies, to verify the electricity generated by the utilities. During the audits FERC intends to determine whether utilities are consistently and accurately reporting data to OCRWM. OCRWM will reimburse FERC for the costs associated with performing this work. Costs had not been estimated as of September 30, 1985.

One-Time Fees Are Verified

In June 1985 DOE's EIA issued the results of a contractor-performed verification of the one-time fee as calculated by each utility. (For an explanation of the one-time fees, see ch. 1.) The verification process covered 4 nuclear fuel storage facilities, 1 research reactor, and 78 commercial power reactors operated by 41 utility companies. It was based on an

[3]For a detailed discussion of the June 1985 audit report, see our fourth quarterly report (GAO/RCED-85-156).

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analysis of the consistency of the data on electricity generated as reported by utilities to different agencies of the U.S. government. Utilities have reported this information in different formats to DOE's predecessor agencies and to NRC. Each utility's proposed one-time fee was considered verified if (1) the data independently provided to the different agencies was consistent, within certain limits, and (2) the fee analyses resulted in computation that was mathematically accurate.

EIA's analyses resulted in a reactor or other facility receiving either an unqualified or qualified verification or no verification. An unqualified verification meant that the proposed fee would not be altered. A qualified verification meant that the proposed fee would change on the basis of discrepancies noted and that the fee change is quantifiable in dollars. No verification meant that information required to perform the verification was either not provided or was inadequate, or the discrepancies were not reconcilable. Fee changes were not quantifiable in dollars.

Verification results are shown in table 3.1.

Table 3.1: EIA Verification Results

Dollars in millions

Verification status	Number of reactors/ facilities	Fee amount
Unqualified	68	$1,781.4
Qualified	5	177.2[a]
None	10	371.5
Total	**83**	**$2,330.1**

[a]These fees could increase by as much as $353,000.

EIA officials stated that they are continuing fee verification as information becomes available, but they plan no further overall verification of the one-time fee; however, OCRWM is working to resolve the outstanding inconsistencies.

DOE's Inspector General Contracts for Audit of Nuclear Waste Program

In August 1985 DOE's OIG awarded an $864,000 cost-plus-fixed-fee contract to Leonard G. Birnbaum and Company, an independent public accounting firm, to audit various nuclear waste programs. The contract, to run for 1 year with two 1-year options, calls for the OIG to assign specific task orders to the firm. The contract specifies that the OIG will designate tasks for the contractor to perform. Accordingly, the following two tasks were assigned by the OIG by September 30, 1985.

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- The contractor will evaluate the effectiveness of procedures followed by OCRWM and any offices delegated responsibility by OCRWM, such as EIA, to verify fees paid by utilities into the Nuclear Waste Fund. The evaluation will include a review of all contracts for the disposal of spent nuclear fuel and high-level waste entered into by utilities and a selected review of both the quarterly and one-time fee payments. The review may also include visits to selected nuclear reactor sites to identify causes for problems found in the verification process. The auditors expect to deliver a draft report on its findings to the OIG by January 20, 1986. The projected cost for this task is $106,000.
- The contractor will perform a general survey/review of OCRWM's compliance with the milestones and objectives of the NWPA. The survey will also emphasize managerial controls designed to ensure that OCRWM operations are performed efficiently and economically. The audit may result in suggestions for additional comprehensive reviews. Some of the areas identified in the task for consideration during the survey are organizational structure and internal management controls, procurement and contracting procedures and actions, status and completeness of the mission plan, accounting and cash management procedures for the Nuclear Waste Fund, the time table data for activation of the repository and MRS facilities, and actions taken by OCRWM as a result of the President's decision to commingle defense and commercial high-level nuclear waste. The auditors expect to deliver a draft report on their general survey by January 31, 1986. The projected cost for this task is $67,600.

DOE Relations With States and Tribes

NWPA requires DOE to consult and cooperate with affected states and Indian tribes as it implements the waste program. The act also provides for grant assistance to states and tribes to finance state and tribal activities associated with site-selection and repository development. In addition to formal federal interaction with states and tribes, the conduct of site selection activities and future site characterization studies requires almost constant coordination among federal, state, and tribal officials.

As discussed in previous quarterly reports, DOE's program for consulting and cooperating has been evolving. OCRWM's mission plan, issued in July 1985, included an institutional relations strategy that consists of three elements: (1) outreach and participation, (2) formal consultation and cooperation agreements, and (3) impact analysis and mitigation. During this quarter DOE continued to increase its outreach, participation, and related information dissemination efforts, and made some progress in the area of formal consultation and cooperation agreements. OCRWM also continued its grant program designed to assist states in identifying the

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impact of a potential site in their state, and for related purposes. However, as evidenced by hearings held before House and Senate Committees, states' and tribal leaders' confidence in DOE's implementation of the program remains low because of a variety of concerns, some of which date back to the beginning of the program.

Outreach and Participation

During the quarter OCRWM officials continued their efforts to inform and involve states and tribes in the conduct of the program. Of particular note during the quarter were the following:

- OCRWM officials continued to meet with state and tribal officials to discuss and clarify comments on the draft environmental assessments.
- OCRWM officials continued their practice of meeting quarterly with state and tribal officials to discuss overall program status and progress. A meeting of this type took place in Denver in August 1985.
- Each of the three Office of Geologic Repositories desk officers that were recently assigned the responsibility for being the initial headquarters interface with the six first repository states (see GAO/RCED-85-156) visited one of the two states for which they have individual responsibility. Each of the desk officers said the project offices and states have responded favorably to the new system. However, at least one state and one project office have said that desk officers are of little value. OCRWM plans to establish desk offices for the second repository states as soon as possible.
- The Office of Policy, Integration, and Outreach (now the Office of Policy and Outreach), through contracts, published a series of information pamphlets to be distributed to the general public.
- OCRWM officials met several times with Tennessee state and local officials to discuss the potential impact of an MRS site in Tennessee. OCRWM officials also held several public meetings throughout the state to explain the role of MRS.

During the quarter OCRWM issued new guidelines for interaction with community and local governments. According to OCRWM officials, these guidelines provide principles for DOE project offices' interaction with local populations. Such interaction will become more prevalent and important when the program moves into the site characterization phase. In addition, OCRWM officials said they were attempting to respond to criticisms from states and tribes about the lack of substantive participation in OCRWM's planning and decision-making processes. As of the end of the quarter, the Office of Geologic Repositories' interagency coordinating

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group that addresses institutional relations was considering ways to involve states earlier in the agency's decision-making processes.

Consultation and Cooperation

The act requires DOE to formally negotiate consultation and cooperation agreements with states that have sites selected for site characterization studies. States and Indian tribes can request such agreements sooner, if they so desire. During the quarter, no states initiated formal negotiations with OCRWM for a consultation and cooperation agreement under the act. Furthermore, negotiations with the only state (Washington) to approach OCRWM about a consultation and cooperation agreement remained suspended. (See our previous quarterly reports for a discussion of the issues hindering final agreement). However, on June 10, 1985, the Confederated Tribes of the Umatilla Indian Reservation requested DOE to begin negotiating a consultation and cooperation agreement to identify and provide a means of resolving the tribe's public health, safety, environmental, and economic concerns that are associated with the proposed location of a repository in Hanford, Washington. During the quarter three negotiation sessions were held among OCRWM and Richland project office officials and tribal representatives.

Impact Analysis and Mitigation

NWPA requires DOE to provide grant assistance from the Nuclear Waste Fund to affected states and tribes to aid them in such activities as (1) reviewing activities with respect to proposed repository sites for potential economic, social, public health and safety, and environmental impacts, (2) developing requests for assistance from DOE to mitigate the impact of repository development, and (3) participating in monitoring, testing, and evaluating site characterization. Since enactment of NWPA, grants totaling about $22 million have been awarded to 29 different grantees. Most of the grants covered 1 year and went to individual state governments or Indian tribes; others, however, have been made to universities and to national associations representing states or Indian tribes. Grant assistance provided by DOE from January 1983 through June 1985 is shown in appendix IV.

State Concerns

Despite the evolving efforts of DOE to develop a viable, effective consultation and cooperation program, many states remain skeptical and critical of the conduct of the program. In September 1985 cognizant House and Senate Committees held hearings to review the mission plan. At these hearings several state and tribal representatives cited concerns that, in their view, substantially affect the credibility of the DOE waste

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program. These stated concerns, some of which can be traced to the early days of the act, included

- displeasure with OCRWM's plan to determine the suitability of sites at the time three sites are recommended for site characterization studies rather than after the studies are completed (see ch. 2 for an explanation of this issue);
- displeasure with OCRWM's emphasis on meeting schedule dates and time frames, especially the 1998 acceptance date, at the expense of adequate screening and testing procedures;
- the lack of meaningful state and tribal involvement in the decision-making processes of the program;
- inadequate or untimely responses to requests for information; and
- an apparent emphasis by DOE on federal site ownership and politics in the first repository site selection process.

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Status of the Nuclear Waste Fund as of September 30, 1985

NWPA established the Nuclear Waste Fund, a separate fund maintained by the Department of the Treasury, to finance the nuclear waste program. It receives fees paid by the owners and generators of high-level radioactive waste and disburses funds to finance OCRWM activities. The fund began receiving quarterly fees from the ongoing generators of nuclear power late in fiscal year 1983. During the quarter ending September 30, 1985, the fund received quarterly fees totaling about $92.3 million. The fund also received one-time fees from the owners of spent fuel generated prior to April 7, 1983, of about $1.5 million. During the same quarter, the fund disbursed about $101.1 million, most of which went to contractors who conduct the bulk of program activities for OCRWM.

In addition to fees collected from utilities, two other funding sources currently support OCRWM activities: interest income from investments made with excess money in the waste fund and appropriated funds for generic research not directly related to repository development. OCRWM began investing excess funds in February 1985. During the quarter ending September 30, 1985, the fund collected interest earnings of about $12.4 million from these investments. OCRWM spent about $540,000 during the quarter in appropriated funds for research and development programs authorized under the act but not directly related to repository development or eligible for financing through the Nuclear Waste Fund.

Nuclear Waste Fund Receipts and Costs

Quarterly Receipts

As described in chapter 1, DOE has contracted with 65 owners of nuclear reactors for the payment of a one-mill-per-kilowatt-hour fee to be paid quarterly into the fund to finance the waste program. The fund began receiving quarterly fees late in fiscal year 1983, and by the end of that fiscal year had collected about $73.6 million. During fiscal year 1984 quarterly receipts totaled about $329.5 million. During the fourth quarter of fiscal year 1985, quarterly receipts of about $92.3 million were collected, making a total of $368.0 million for fiscal year 1985, and $771.1 million since the program began.

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First One-Time Fees Received

Under the DOE contracts, owners of spent fuel generated prior to April 7, 1983, must have selected by June 30, 1985, one of three options to pay one-time fees: (1) payment over 40 quarters with interest, (2) lump-sum payment with interest before delivering spent fuel to the federal government, or (3) full payment before June 30, 1985, without interest.

By June 30, 1985, the fund had received about $1.4 billion in one-time fees from 35 owners who chose option 3. During this quarter one of three owners who chose option 1 paid about $1.5 million into the fund. (These three owners owe a total of $174 million plus interest.) Eleven other owners decided to make future lump-sum payments totaling $735 million plus interest.

DOE Is Investing Funds That Are in Excess of Current Needs

NWPA provides that when the Nuclear Waste Fund has funds that are in excess of current needs, including the appropriated debt owed to the Department of the Treasury, DOE may request the Secretary of the Treasury to invest these excess funds in Treasury financial instruments in amounts as the Secretary of Energy determines appropriate. DOE made its first investment in overnight Treasury bills on February 1, 1985.

In the quarter ending September 30, 1985, DOE made both overnight and other short-term investments (less than 90 days). Daily overnight investments earned about $863,000 in interest during the quarter. DOE invested $80 million in six short-term Treasury bills that matured during the quarter, earning interest of about $369,000. In addition, DOE earned interest totaling $911,000 from a short-term Treasury bill that was purchased last quarter but matured during this quarter.

DOE will continue investing funds in overnight and other short-term Treasury instruments. As of July 2, 1985, DOE also began to make long-term investments (90 days to 3 years) following the receipt of $1.4 billion in one-time fees. DOE has invested in various long-term Treasury bills and notes so that they mature at different times to use for specific program purposes.[1] During the quarter DOE collected periodic earned interest on these long-term instruments of about $10.2 million.

Nuclear Waste Fund Costs

OCRWM obligates moneys from the Nuclear Waste Fund by awarding contracts and grants and disbursing funds for its civil service payroll and

[1]See our fourth quarterly report (GAO/RCED-85-156) for a summary of DOE's long-term investment strategy.

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other program management needs. It can obligate amounts only as appropriated even though funds may be available in the Nuclear Waste Fund. OCRWM's appropriation for fiscal year 1985 totals $327.6 million. Actual costs are recorded when invoices are received, and disbursements are recorded when payments are made. Obligations, costs, and disbursements are recorded in DOE's financial information system by the field finance offices that receive allocations from the fund.

Beginning with fiscal year 1985, these transactions are recorded under the five major cost activities shown in the table in appendix V. The table shows that a total of $314.8 million was spent during fiscal year 1985. The table also shows waste fund costs by each major activity and subactivity for fiscal year 1985 and shows that about $223 million, or 70 percent, of the funds were spent for developing the first repository. Activities in this category are primarily managed by the field offices and the Office of Geologic Repositories and include (1) the development, verification, and application of geological repository performance assessment models, (2) preliminary site characterization studies, (3) repository design development, and (4) preparation of environmental assessments.

OCRWM field offices began, in fiscal year 1985, to report costs and obligations into the DOE financial information system by work breakdown structure.[2] Detailed cost data concerning the development, construction, and operation of the first and second repositories are shown in appendix VI.

OCRWM Contract Activity

NWPA authorizes DOE to make expenditures from the fund to finance radioactive waste disposal activities. These activities include all phases of developing, constructing, operating, and closing any repository, MRS facility, or test and evaluation facility authorized under the act; research, development, and demonstration activities connected with the repositories; the administrative cost of the radioactive waste disposal program; and any costs associated with transporting, treating, and packaging spent nuclear fuel or high-level radioactive waste.

Most waste disposal activities have been and are being carried out by contractors. During the fourth quarter of fiscal year 1985, DOE spent

[2]For more information on OCRWM's work breakdown structures, see our second quarterly report (GAO/RCED-85-65).

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about $92 million for contractor services and obligated about $67 million, about 92 percent of total dollars obligated during the quarter. For fiscal year 1985 OCRWM contract obligations were about $278 million. Since inception of the fund, OCRWM has obligated about $744 million for over 120 contracts.

Contracts for the most part are negotiated, awarded, and administered through DOE operations offices in Richland, Washington; Chicago, Illinois; and Las Vegas, Nevada; and in DOE headquarters in Washington, D.C. Some contracts are monitored by other DOE operations offices, such as those in Albuquerque, New Mexico, and San Francisco, California. Each of the three first repository project offices has prime contracts with one or several contractors who perform waste program activities or subcontract for these activities. Appendix VII summarizes contract activity since inception of the fund. It also lists individually the 16 prime contractors who incurred costs or obligations of $1 million or more during the quarter ending September 30, 1985. Data from contracts under $1 million are aggregated in the "others" category.

Overall Status of the Nuclear Waste Fund

Section 302 of NWPA required DOE to transfer unexpended appropriations as of January 7, 1983, from the ongoing nuclear waste program to the waste fund. Subsequently, DOE transferred about $254 million to the waste fund in fiscal year 1983. This amount became an appropriated debt to be repaid later from the fund to the Treasury with interest on the amounts used for the program. Another $4.6 million was transferred into the fund (and became part of the debt) in fiscal year 1984 from other appropriations that had been passed before the fund was established. An additional $6.5 million was added to the appropriated debt during the quarter ending September 30, 1985, as a result of the audit of fiscal years 1983 and 1984 program funds.[3] About $860,000 in interest expense accumulated on the appropriated debt during fiscal year 1985. On September 30, 1985, DOE repaid the debt, a total of about $265 million, plus interest from the fund to Treasury.

Table 4.1 summarizes the overall status of the fund as of September 30, 1985.

[3]See our fourth quarterly report (GAO/RCED-85-156) for an explanation of these changes.

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Table 4.1: Status of the Nuclear Waste Fund as of September 30, 1985

Beginning fund balance - July 1, 1985	$ 1,707,233,183
Fees from waste owners	93,858,193
Investments collected	37,772,345[a]
Transfer of appropriations	6,521,393
Total funds available	**$1,845,385,114**
Disbursements	-101,128,864
Payment of appropriated debt	-264,964,663
Fund balance as of September 30, 1985	**$1,479,291,587**
Cash balance as of September 30, 1985	$ 577,599
Funds invested	1,478,713,988
Unpaid obligations as of September 30 1985	$ 136,622,477

[a]Investments collected include interest accrued on financial instruments at the time DOE purchased them.

Source: OCRWM's Office of Resource Management and DOE's financial information system.

Other Funding Sources

Activities under the Civilian Radioactive Waste Research and Development (R&D) Program that are not directly related to the geologic repositories are funded from appropriated funds rather than from fees collected from utilities. Some of the research was in progress prior to passage of NWPA and other research involves new initiatives. The R&D program funds and conducts research in the following areas:

- spent-fuel storage,
- alternative disposal concepts, and
- generic methods and supporting studies.

Currently, DOE has cooperative agreements with Virginia Electric and Power Company and Carolina Power and Light Company and a contract with Nuclear Fuel Services to demonstrate dry storage of spent fuel. DOE is also working with the Tennessee Valley Authority and is negotiating with Northeast Utilities Company of Hartford, Connecticut, to demonstrate spent-fuel rod consolidation. OCRWM expects an agreement with Northeast Utilities Company in 2 to 4 months. For spent-fuel storage R&D demonstration programs, total DOE fund and facility contribution is to be up to 25 percent of total cost. All other costs are paid by utilities. OCRWM expects that these R&D efforts will be phased out, except for monitoring, by 1989.

The only alternative disposal research that DOE is conducting in detail is the use of subseabeds for the disposal of spent fuel and other high-level

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waste. DOE expects that by 1990 it will determine the technical, engineering, environmental, and institutional feasibility of disposing of these wastes in the stable formations of the deep ocean floor.

Generic methods and supporting studies conducted by OCRWM are focused on three main areas: international program support, special technical reviews, and waste management studies. The purpose of these efforts is to ensure adequate international cooperation, provide an independent assessment of the technical adequacy of the program, and evaluate alternatives that could improve the cost, schedule, or technical aspects of the R&D program.

Table 4.2 shows accrued costs for the R&D program for fiscal year 1985.

Table 4.2: Costs for Civilian Radioactive Waste R&D Program for Fiscal Year 1985

Dollars in millions

	First quarter	Second quarter	Third quarter	Fourth quarter	Fiscal year 1985[a]
Spent-fuel storage R&D	$ 2.14	$ 2.20	$ 3.21	$ 2.86	$ 10.40
Alternative disposal concepts	.60	3.05	2.73	3.59	9.97
Generic methods and supporting studies	.35	.50	.05	-5.92[b]	-5.02[b]
Program direction	.07	.06	.07	.01	22
Total	**$ 3.16**	**$ 5.81**	**$ 6.06**	**$ .54**	**$ 15.57**

[a]Totals may not add because of rounding.

[b]Negative figure results from activity amounting to $6,303,337 in costs after January 1, 1983, which an OCRWM contract audit determined should have been transferred as an unexpended appropriation from the Civilian Radioactive Waste R&D account to the Nuclear Waste Fund account. Transfer was made in September 1985 and reflected as negative cost in the account.

Source: DOE's financial information system.

Another source of funding authorized by the act is the Interim Storage Fund. That fund is to receive fees from utilities that apply for and receive from the government interim storage services for spent fuel. Fees are to be based on the estimated prorated costs of storage, which include the costs of developing and maintaining interim storage facilities. To date, no utilities have applied for interim storage services, and DOE officials do not anticipate using interim storage in the near future.

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GAO Reports and Briefing Documents on the Nuclear Waste Program

Annual Reports

Department of Energy's Initial Efforts to Implement the Nuclear Waste Policy Act of 1982 (GAO/RCED-85-27, Jan. 10, 1985).

Nuclear Waste Policy Act: 1984 Implementation Status, Progress, and Problems (GAO/RCED-85-100, Sept. 30, 1985).

Quarterly Reports

Status of the Department of Energy's Implementation of the Nuclear Waste Policy Act of 1982 as of September 30, 1984(GAO/RCED-85-42, Oct. 19, 1984).

Status of the Department of Energy's Implementation of the Nuclear Waste Policy Act of 1982 as of December 31, 1984(GAO/RCED-85-65, Jan. 31, 1985).

Status of the Department of Energy's Implementation of the Nuclear Waste Policy Act of 1982 as of March 31, 1985(GAO/RCED-85-116, Apr. 30, 1985).

Status of the Department of Energy's Implementation of the Nuclear Waste Policy Act of 1982 as of June 30, 1985(GAO/RCED-85-156, July 31, 1985).

Briefing Documents

On July 30, 1985, we issued a briefing document to the Chairman, Subcommittee on Energy Conservation and Power, House Committee on Energy and Commerce, and the Chairman, House Committee on Interior and Insular Affairs, concerning how utilities manage fees collected for nuclear waste disposal. We responded to specific questions and provided information concerning

- amounts owed by utilities for one-time fees and total amounts collected from ratepayers;
- methods used by utilities to account for one-time fees;
- how utilities treat interest they collect on investments of both one-time fees and one-mill-per-kilowatt-hour fees; and
- how utilities treat, for tax purposes, receipts from ratepayers and payments of one-time fees.

On September 12, 1985, we issued a briefing document to the Chairman, House Committee on Interior and Insular Affairs, concerning the aggregation methods OCRWM used in the draft environmental assessments to rank the five potential nuclear waste repository sites in Mississippi,

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Nevada, Texas, Utah, and Washington. OCRWM chose three methods of ranking these sites and then aggregated the rankings when none of the three methods showed any sites to be clearly preferred. We observed that the methods selected met DOE's criteria of being practical and understandable. In addition, if DOE's initial judgements concerning the ranking of sites for each guideline are accepted, the rankings are reproducible.

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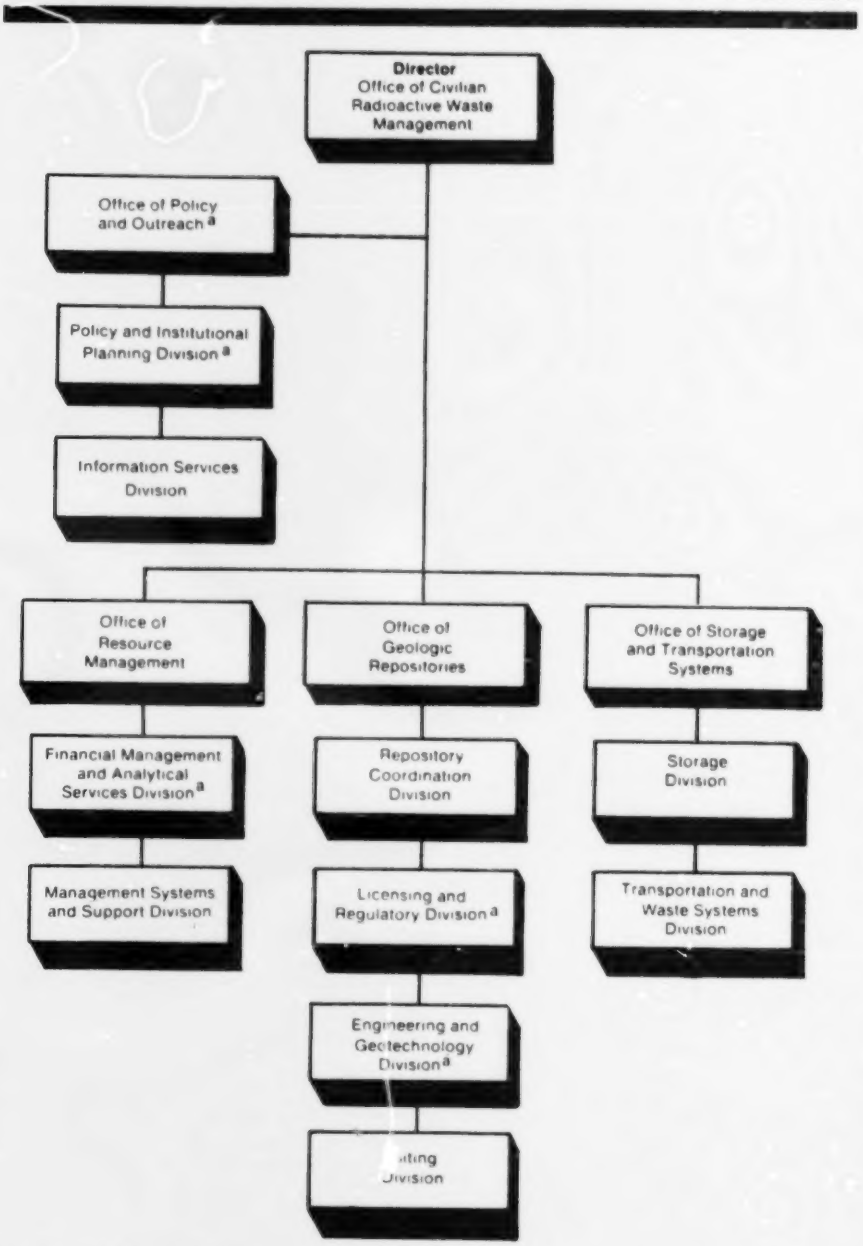
OCRWM Organizational Chart

Figure II.1: OCRWM Organizational Chart As of September 30, 1985


Director
Office of Civilian Radioactive Waste Management
Office of Policy and Outreach[a]
Policy and Institutional Planning Division[a]
Information Services Division
Office of Resource Management
Financial Management and Analytical Services Division[a]
Management Systems and Support Division
Office of Geologic Repositories
Repository Coordination Division
Licensing and Regulatory Division[a]
Engineering and Geotechnology Division[a]
Office of Storage and Transportation Systems
Storage Division
Transportation and Waste Systems Division

[a]Change made September 1985.

Source: DOE.

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OCRWM Staffing Levels

Table III.1: OCRWM Staffing Levels As of September 30, 1985

Program office	Full-time personnel ceiling[a]		Number of full-time personnel on board			
	Dec. 1984	Mar. 1985[b]	Dec. 1984	Mar. 1985	June 1985	Sept. 1985
Office of the Director	4	4	6	6	5	4
Office of Policy, Integration and Outreach[c]	12	23	21	21	21	21
Office of Resource Management	31	36	27	26	31	32
Office of Geologic Repositories	42	46	31	38	40	50
Office of Storage and Transportation Systems	15	22	16	21	23	26
OCRWM headquarters total	**104**	**131**	**101**	**112**	**120**	**133**
Field offices:						
Chicago	64	68	55	56	57	59
Richland	30	32	33	32	35	36
Nevada	17	19	12	14	14	14
Field total	**111**	**119**	**100**	**102**	**106**	**109**
Total[d]	**215**	**250**	**201**	**214**	**226**	**242**

[a]Does not include ceilings for part-time support personnel.

[b]Personnel ceilings remained the same during the quarter ending September 30, 1985.

[c]As of September 30, 1985, this office became the Office of Policy and Outreach.

[d]Total does not include staff time used by other DOE offices and charged to the Nuclear Waste Fund. For fiscal year 1985, OCRWM estimates this time totals about 18 staff years.

Source: DOE.

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State/Indian Tribe Assistance Under NWPA

Table IV.1: State/Indian Tribe Assistance Provided by DOE January 1983 through September 1985

Grantee	DOE obligations
Confederated Tribe of Umatillas	$ 819,819
Connecticut	317,126
Georgia	247,931
Illinois	24,580
Louisiana	833,319
Maine	412,840
Maryland	103,135
Massachusetts	404,433
Michigan	447,510
Minnesota	550,587
Mississippi	1,885,836
National Congress of American Indians	417,551
National Conference of State Legislators	439,339
Nevada	2,894,861
New Hampshire	264,538
New Jersey	224,382
New York	443,128
Nez Perce Tribe	526,568
North Carolina	464,013
Rhode Island	217,731
South Carolina	401,481
Tennessee	1,404,533
Texas	952,457
Utah	1,670,077
Vermont	119,180
Virginia	41,130
Washington	2,735,473
Wisconsin	587,456
Yakima Indian Nation	2,146,852
Total	**$21,997,866**

Source: DOE's financial information system and OCRWM.

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Appendix V

Nuclear Waste Fund Costs

Table V.1: Status of Nuclear Waste Fund Costs for Fiscal Year 1985

Funding category	First quarter costs	Second quarter costs	Third quarter costs	Fourth quarter costs	Cumulative[b] costs
First repository					
Development, construction, operations	$ 31,118,826	$ 50,699,094	$ 66,104,838	$ 68,461,285	$ 216,384,044
Capital equipment	1,099,790	1,268,894	1,430,863	2,532,210	6,331,758
Plant acquisition and construction	0	0	0	0	0
Total first repository	**32,218,616**	**51,967,988**	**67,535,701**	**70,993,495**	**222,715,801**
Second repository					
Development, construction, operations	4,528,144	4,390,476	5,657,587	6,613,275	21,189,483
Capital equipment	47,423	1,500	23,000	39,000	110,923
Plant acquisition and construction	0	0	0	0	0
Total second repository	**4,575,567**	**4,391,976**	**5,680,587**	**6,652,275**	**21,300,405**
Monitored retrievable storage					
Development, construction, operation	1,481,904	3,534,651	4,549,040	5,687,962	15,253,557
Capital equipment	0	54,297	30,864		85,161
Plant acquisition and construction	0	0	0	0	0
Total monitored retrievable storage	**1,481,904**	**3,588,948**	**4,579,904**	**5,687,962**	**15,338,717**
Program management and technical support					
Transportation, management, support	7,391,268	13,292,270	13,103,227	20,534,968	54,321,733
Capital equipment	-2,171[a]	36,603	29,765	210,202	274,400
Plant acquisition and construction	0	0	0	0	0
Total program management and technical support	**7,389,097**	**13,328,873**	**13,132,992**	**20,745,170**	**54,596,133**
Debt service					
Interest expense owed to Treasury	515,150	262,123	86,126	0	863,399
Total debt service	**515,150**	**262,123**	**86,126**	**0**	**863,399**
Total	**$ 46,180,334**	**$ 73,539,908**	**$ 91,015,310**	**$104,078,902**	**$314,814,455**

[a]Negative figure results from adjustments to prior year costs.

[b]Totals may not add because of rounding.

Source: DOE's financial information system.

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Costs by Work Breakdown Structure

Table VI.1: Costs By Work Breakdown Structure for the First and Second Repositories for Quarter Ending September 30, 1985

Dollars in millions

Work breakdown structure task	First repository					Second repository	
	Basalt	Tuff	Salt	Total[a]	FY 85 total	Crystalline and other rock types total	FY 85 total[a]
Systems	$ 1.65	$ .85	$ 1.29	$ 3.79	$ 15.33	$2.11	$ 3.02
Waste package	2.61	1.95	1.89	6.45	20.22	.00	.03
Site	6.64	2.78	4.55	13.96	56.86	2.50	11.72
Repository	3.25	2.95	5.32	11.52	31.41	.12	.48
Regulatory and institutional	1.75	2.09	6.39	10.24	30.78	.39	1.36
Exploratory shaft	2.50	2.85	2.12	7.47	21.76	.00	.00
Test facilities	1.21	.30	.13	1.64	4.48	.18	.83
Land acquisition	.00	.00	.04	.04	.16	.00	.00
Program management	2.46	4.49	2.53	9.47	29.19	.68	2.50
Financial and technical assistance	2.36	.59	.92	3.87	6.76	.53	.97
Other	.00	.00	.00	.00	.00	.10	.24
Total[a]	**$24.44**	**$18.85**	**$25.18**	**$68.46**	**$216.95**	**$6.61**	**$21.15**

[a]Totals may not add because of rounding.

Source: DOE's financial information system.

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OCRWM Contract Activity

Table VII.1: Summary of OCRWM Contract Activity

DOE operations office contractor name	Total number of contracts	Costs, fourth quarter FY 85	Obligations, fourth quarter FY 85	Cumulative obligations since inception
Albuquerque:				
Univ. of California	1	$ 3,072,366	$ 0	$ 28,873,000
AT&T Technologies Inc. (previously was Western Electric Co., Inc.)	1	5,554,493	156,000	51,366,878
Others	5	24,724	90,500	452,425
Total	**7**	**$ 8,651,583**	**$ 246,500**	**$ 80,692,303**
Chicago:				
Battelle Memorial Institute	4	24,250,381	30,310,352	231,329,199
Fluor Engineers & Construction	1	4,346,065	4,000,000	19,976,000
University of Texas	3	669,600	1,173,000	8,049,100
Others	23	1,722,888	1,866,111	21,734,704
Total	**31**	**$30,988,934**	**$37,349,463**	**$281,089,003**
Idaho:				
Others	2	$ 609,422	$ 87,000	$ 4,107,951
Total	**2**	**$ 609,422**	**$ 87,000**	**$ 4,107,951**
Nevada:				
Department of the Interior[a]	1	3,473,859	0	21,898,000
Reynolds Electric & Engineering Co.	2	1,339,153	2,712,888	35,622,679
Science Applications, Inc.	1	2,446,725	737,366	16,673,210
Others	18	1,318,441	318,232	13,802,196
Total	**22**	**$ 8,578,178**	**$ 3,768,486**	**$ 87,996,085**
Oak Ridge:				
Martin Marietta	1	1,245,949	95,000	4,858,359
Others	5	263,700	225,000	2,596,639
Total	**6**	**$ 1,509,649**	**$ 320,000**	**$ 7,454,998**
Richland:				
Battelle Memorial Institute	4	4,266,847	2,503,663	41,663,718
Kaiser Engineers and Construction	1	2,215,600	1,839,900	6,533,517
Morrison Knudsen Co., Inc.	1	2,541,757	0	12,163,100
Ralph M. Parsons Co.	1	3,956,014	2,711,727	15,237,652
Rockwell Hanford Co.	1	$16,733,626	$ 8,217,163	$134,277,010
Others	14	960,999	181,475	8,503,832
Total	**22**	**$30,674,843**	**$15,453,928**	**$218,378,829**

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DOE operations office contractor name	Total number of contracts	Costs, fourth quarter FY 85	Obligations, fourth quarter FY 85	Cumulative obligations since inception
San Francisco:				
Univ. of California	2	$ 3,216,355	$ 2,816,450	$ 29,754,375
Others	2	0	0	663,320
Total	**4**	**$ 3,216,355**	**$ 2,816,450**	**$ 30,417,695**
Headquarters:				
Roy F. Weston, Inc.	1	7,593,222	6,676,393	28,899,565
Others	26	563,454	181,678	4,918,690
Total	**27**	**$ 8,156,676**	**$ 6,858,071**	**$ 33,818,255**
Total (all contracts)	**121**	**$92,385,640**	**$66,899,898**	**$743,955,119**

[a]The Department of the Interior's U.S. Geological Survey is performing on-site work for the Nevada Project Office under contract.

Source: DOE's financial information system.

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